

KISSIMMEE BASIN WATER SUPPLY PLAN



Progress Report

January 2002 Volume 1, Issue 1



S.R. 78 crossing of the Kissimmee River near Lake Okeechobee

Kissimmee Basin Water Supply Plan – A Year in Review

As we enter 2002, it is a good time to review the progress and accomplishments made in implementing the recommendations of the Kissimmee Basin Water Supply Plan (KBWSP). It was in April of 2000 that the South Florida Water Management District (SFWMD) completed an evaluation of the existing and future water resources for areas within their jurisdiction located north of Lake Okeechobee. The plan, entitled the Kissimmee Basin Water Supply Plan (KBWSP), concluded that traditional groundwater sources within the Central Florida area and surface water sources within the Lake Istokpoga Basin may become limited over the 20 year planning horizon, ending in 2020, due to significant increases in urban and

agricultural water uses. A public advisory committee of over 20 individuals representing agriculture, public water supply, recreational and environmental interests helped the District develop recommendations that were included as part of the KBWSP. These recommendations prescribed how the District should address the identified water supply issues and included a series of hydrologic research and alternative water supply development investigations.

Several recommendations are made within the KBWSP, among these are the research into hydrologic conditions, re-evaluation of existing resources, and the development of technologies for alternative water supplies. This newsletter was developed to provide the reader with an update on the status of the District's efforts in implementing the plan recommendations.



Drilling begins the wells at the Disney Wilderness Preserve located in Ocala and Polk Counties.

Letter from the Plan Manager

The South Florida Water Management District completed its first water supply planning effort for the Kissimmee Basin in April of 2000. Numerous members of the general public and several government representatives put in dozens of hours to assist the District in completing this plan. This was a significant effort on the part of these individuals who took time away from their private lives and jobs to assist in this two-year effort. To those individuals who took the time to assist in the plan development we salute you and want you to know that your efforts were critical to the creation of the plan and are greatly appreciated. The District has been busy this past year implementing many of the recommendations that were made in the water supply plan.

This newsletter is designed to give those who assisted in the plan development and others an overview for what has been accomplished so far on the KBWSP and to give an indication of where we are heading over the coming year. I hope you will agree that we are well on our way to accomplishing what we set out to do, and that we are on track to implementing the recommendations set before us. Also included is information on related efforts such as the Lake Istokpoga drawdown and the recent drought that have affected the plan implementation. Please feel free to call or e-mail me, as many of you have, to get the latest on the plan progress. You can also check our web site on water supply planning web page at: <http://www.sfwmd.gov/org/pld/proj/wsp>.

Sincerely,
Chris Sweazy, SFWMD Project Manager
Kissimmee Basin Water Supply Plan

First Year Deep Well Drilling Effort Tops 1.9 Million Dollar Price Tag

Efforts to collect hydrologic information within the Kissimmee Basin Planning area were given a high priority in the KBWSP recommendations. For this reason, the District focused its efforts for Fiscal Year 2001 (FY01) on the area of constructing and testing of exploratory wells into the Floridan aquifer system. The goals of this program are to collect hydrologic, geologic and water quality information on the upper, middle and lower Floridan aquifer units. The District committed funds towards four major drilling projects in FY01 including: the drilling of two 2200 foot wells on the Upper Lakes Watershed property near Intercession City, the drilling of two upper Floridan and six shallow wells at the Disney Wilderness Preserve in Polk County, the drilling of a single 2200 foot well located near Disney World, and the drilling of three wells in Glades and Okeechobee counties as part of the District's research effort on Aquifer Storage and Recovery (ASR) technology. Most of these projects will continue into the following year. In addition, the District is just finishing construction of a 2300 foot well just south of the City of St. Cloud. When completed, each of these well sites will be fitted with water level recorders and added to the District's expanding monitoring network.

The District's efforts in this area of aquifer exploration could not have occurred without the generous support of the partners who have provided access to sites as well as financial support. These partners include Orange County Utilities, Reedy Creek Improvement District and The Nature Conservancy. This exploration program is also being furthered by the efforts of the Southwest Florida and St. Johns River Water Management Districts who are conducting their own drilling programs in Lake, Polk and Highlands counties and with whom information is being shared.

SFWMD Partners with SJRWMD on Development of Sinkhole Criteria

One of the concerns raised during the water supply planning effort was the possible occurrence of sinkholes due to reductions in aquifer levels. Work previously completed by the Florida Sinkhole Research Institute at the University of Central Florida and other professionals suggest a relationship between the drop in water levels in the Floridan aquifer and the frequency of occurrence of sinkholes in Central Florida. In order to better understand this relationship, the South Florida and St. Johns River Water Management Districts have joined efforts in acquiring the services of Bill Wilson, P.G. with Subsurface Evaluations, Inc. (SEI). Mr. Wilson is an expert in the evaluation of new sinkhole occurrence frequency through risk based models. The study is expected to provide the Districts with a means of evaluating risks associated with projected water levels declines. SEI began its work early this summer with the development of a database of new sinkhole occurrence and is expected to begin work on evaluating potential sinkhole risk beginning next year.

Veteran Central Florida Water Manager Takes Over the Reins of the South Florida Water Management District

With water supply planning high on his list of new challenges, Henry Dean, longtime executive director of the St. Johns River Water Management District, is now leading the South Florida Water Management District.

For 17 years Mr. Dean led the St. Johns District as its staff took on numerous challenges, including the development of a Central Florida Water Supply strategy.

One of Mr. Dean's greatest new challenges will be the implementation of the Comprehensive Everglades Restoration Plan and the four District water supply plans for the SFWMD. In particular, Mr. Dean's appointment bodes well for the water supply planning effort in Central Florida. With his knowledge of Central Florida water issues, Mr. Dean is calling on St. Johns River, South Florida and Southwest Florida Water Management Districts to better coordinate their efforts to minimize the duplication of efforts. He also requested staff to ensure that the predictions are as accurate as possible and that the proposed alternative strategies are both technically and fiscally feasible.



"Since the Governor's Executive Order of 1996 mandated that the Water Management Districts develop water supply plans, the Water Management Districts have been moving forward on parallel tracks with some coordination. I propose that we work much more closely together to develop an integrated plan that looks at the interconnections of all of our water resources," said Mr. Dean.

Water Level Monitoring Provides Input for Future Modeling

This year the District began increasing the number of shallow and Floridan aquifer monitoring sites throughout the planning area. This information is deemed critical for the planned future modeling efforts.

"The goal of this effort is to increase the number of sites where daily water levels are monitored by as many as 30 wells between now and next year," said David Butler, Senior Hydrologist with the SFWMD who is working on this effort. "To date we have efforts underway to install recorders on 15 wells located at five different sites," continued David.

David and others at the District are actively seeking access rights to several additional sites to establish new monitoring locations in the fall. Focus is being given to locations with existing Floridan wells that have been monitored in the past. In this way shallow wells can be installed at the same location and water levels for both the shallow and Floridan aquifers can be monitored from a single recorder. This also minimizes the need to construct new Floridan wells. Priority is also being given to sites in Orange, Osceola and Polk counties where groundwater use concerns are expected to be more critical.

KBWSP News In Brief

Water Conservation Coordinator Named

The SFWMD established a water conservation coordinator position and named Michelle Pearcy to head this effort. Ms. Pearcy previously worked for the Detroit Water and Sewer Department as a project manager. In this leadership role she is expected to guide the agency's efforts to encourage and cultivate a strong water conservation ethic among south Florida's utilities, businesses and citizens. For additional information, contact Michelle at 1-800-432-2045 ext. 2174.

District Initiates Rulemaking

The SFWMD has identified 26 rule changes to their water use and well construction programs that they believe will improve our ability to manage the water resources. In workshops held earlier this year, six of these proposed changes were authorized by the Governing Board in November. The changes include minor language revisions for consistency with other rules, edit certain water well permitting and construction standards, changes to forms and fees and changes to basin expiration dates to ease permitting. A complete listing of the authorized changes can be found on the District web board at <http://webboard.sfwmd.gov:8080/~wateruserulemaking> or by contacting Julie Jennison at 1-800-432-2045, extension. 6294.

Reclaimed Injection Pilot Being Evaluated

The District has taken the first steps in looking at the controversial issue of indirect potable reuse. In August, the District contracted with PB Water of Orlando to look at the financial and technical feasibility of injecting highly treated reclaimed water directly into the Floridan aquifer as recharge. Their study will summarize the project design considerations and provide a blueprint of a process for the permitting and construction of a pilot testing project. The study is expected to be completed by early 2002.



Aquifer Recharge Is Key in Improving Long-Term Use of Floridan

Improving aquifer recharge was identified in the KBWSP as one of the primary means of potentially increasing the long-term use of water from the Floridan aquifer in Central Florida. Drainage wells were identified as the means of adding recharge if water quality and permitting issues could be resolved. In fiscal year 2001 the District contracted with Hartman & Associates Inc. (HAI) of

Orlando to conduct an inventory of the estimated 400 drainage wells located in Orange, Seminole and Lake counties. HAI will be performing a compilation of the existing drainage well databases, researching the location of new wells and completing field surveying to verify the collected information. Once the information is collected, HAI will construct a new Geographical Information System (GIS) compatible database for easy interaction and transfer of the information.

The study is also expected to provide the District with information to better estimate existing drainage well recharge, predict where recharge could be improved and provide local utilities with potentially valuable maintenance information. Results of the inventory are expected in the summer of 2002. Both the St. Johns River Water Management District and Orange County are participating in the study.

District and Tribe Develop a Surface Water Quality Monitoring Plan

Lake Okeechobee was identified in the KBWSP as the primary alternative resource for the lower Indian Prairie Basin. Backpumping of Lake Okeechobee water into the lower basin is currently achieved by the structures of G-207 and G-208, located on the northwest side of Lake Okeechobee.

One of the larger users of surface water in the lower basin, the Seminole Tribe, is working with the District to assure that a change in water quality delivered to the Seminole Brighton Reservation does not create compliance issues or an undue regulatory burden to the Tribe. The District and Tribe developed a surface water quality monitoring plan in December 2000 to address these issues. One plan objective is to determine the flow proportional loadings at four reservation boundary locations. The plan consists of the installation of flow measuring equipment and autosamplers at these four monitoring locations during the summer of 2001. In addition to the flow proportional monitoring locations, surface water quality will continue to be monitored at historic grab sampling locations along the reservation boundary. The monitoring program will become a long-term program.

District Delays Investigation of Kissimmee River as Alternative Supply

The use of the Kissimmee River was identified as a potential new source of water for portions of the lower Kissimmee Basin. The use of the Kissimmee River is a complex issue, particularly since the District has a \$512 million restoration project underway. Although discussions on how best to determine the availability of water from the river have begun, no method of evaluation has been decided upon.

"Since the river is one of the primary inputs to Lake Okeechobee and because of the ongoing river restoration efforts, it has been very difficult for us to determine what criteria we would use to determine seasonal availability," said Chris Sweazy, project manager for the water supply plan. "I expect to continue to work with the Kissimmee River Restoration team in the coming year to try to pin this down further," he continued.

This effort, when started, should provide estimated withdrawal amounts which would not cause significant harm and propose minimum flows and levels (MFL). The legal reservation of water, including the MFL, is expected to be completed by the end of 2006.

Lake Istokpoga Drawdown Completed

Among the issues that were brought to light during the development of the KBWSP was the exotic vegetation removal from Lake Istokpoga. Although not included as a recommendation in the KBWSP, the District saw the drawdown and removal of exotic vegetation from Lake Istokpoga as important to the long-term viability of Istokpoga as a water supply source.

The Lake Istokpoga Environmental Enhancement project was sponsored by Florida Fish and Wildlife Conservation Commission (FFWCC) in partnership with the SFWMD, Highlands County, the Florida Department of Environmental Protection and the U.S. Army Corps of Engineers. Originally planned and budgeted by FFWCC for 2003, the SFWMD Governing Board agreed to assist with funding issues associated with early implementation of the project in order to take advantage of low lake levels occurring as a result of the 2000-2001 drought.

Special note should be given to the grass roots efforts by groups like the Friends of Istokpoga and the Lake Istokpoga Management Committee who played a key role in keeping the need for the drawdown in front of the District and FFWCC. It was, in part, through their efforts that District decided to act when the climatic conditions favored action on the drawdown.

Releases from Lake Istokpoga began on February 5, 2001 and continued until the lake reached a level of 36.5 feet above mean sea level. The levels were maintained for a period of about 100 days, allowing for the removal of vegetation and for the exposed lake bottom to dry out. Water releases, totaling 17,811 acre feet, were directed to farms downstream for storage on the farms and later use. It was estimated that only



The District sponsors restoration activities at Lake Istokpoga.

one to two percent of the water release actually exited the basin to Lake Okeechobee. An estimated 1,300 acres of lake shoreline were excavated. Work was completed in July, 2001, at a total cost of \$2.74 million. Recent rains have already brought the lake back to near regulatory release levels.

District Looks at Operational Plan for Lake Istokpoga

During the development of the KBWSP the availability of water from Lake Istokpoga and the Indian Prairie Basin was evaluated. The evaluation conducted recognized, however, that the lake's regulation schedule was subject to change based upon the elements of the Comprehensive Everglades Restoration Plan (CERP). A schedule of activities for the re-evaluation of the Lake Istokpoga regulation schedule will be developed in an upcoming Project Management Plan (PMP) slated for completion by April of 2002. Development of this PMP is expected to begin in January 2002 and will be completed in conjunction with U.S. Army Corps of Engineers (USACE). A process for public input will be incorporated into the PMP scheduled efforts. Results of this work plan are expected to provide insights into the development of the Minimum Flow and Level (MFL) for Lake Istokpoga currently scheduled to be completed by 2004.

Drought Depletes Floridan, Sets the Stage for Records Lows in 2002

The summer of 2001 brought the return of normal rainy season rainfall. Three months of rain, however, turned out to be a drop in the bucket and did little to heal water shortage problems brought on by three years of drought. The last three years of drought have underscored the need to implement and build upon the Kissimmee Basin Water Supply Plan and similar efforts in the region.

In the short term, the drought forced the enactment of a water shortage declaration. To help maintain levels in the Floridan aquifer, the St. Johns River and South Florida Water Management Districts enacted joint Phase II water use restrictions for Orange County in January 2001. A threat of increasing the occurrence of sinkholes was the primary concern that led to water use restrictions. Compared to water use for the same period last year, the restrictions resulted in reductions of more than 20 percent, and helped to limit the number of sinkholes reported throughout the early months of the rainy season. Despite the success of the water use restrictions, the drought has still caused widespread concern over a number of Central Florida lakes that have not appeared to have recovered to historic levels.

Throughout the 2001 rainy season, groundwater levels in Central Florida made a steady recovery. As autumn approached and the rainy season started to wind down, groundwater levels had improved. Nevertheless, several Floridan aquifer monitoring wells still showed groundwater levels only a few feet above record lows. Water levels in the Lake Oliver well located in southwest Orange County surpassed the record low of 104.0 in September of 2001.

With Floridan levels hovering near all-time lows, new record low levels are possible as Florida move back into its traditionally dry winter and spring. Due to the possibility of low groundwater levels, Central Florida residents can look forward to the continuation of mandatory water use restrictions.

Water Resources Advisory Commission Created

In March of 2001 the District Governing Board established the Water Resources Advisory Commission (WRAC) as an advisory body to replace the Water Supply Plan Advisory committees decommissioned earlier. The WRAC is a multi-discipline advisory committee meeting once a month to discuss water supply related issues. Board members Mike Collins and Pat Gleason attend these meetings regularly. The Commission contains members from throughout the District and include representation of the Kissimmee basin planning area from: David Hazellief, Okeechobee Board of County Commissioners; Rick Coleman, Orlando Utilities Commission; and Michelle Thomas of the Seminole Tribe.

Executive Director's Pledge Leads to \$3.6 Million Increase in Orange County Partnerships

During the August Orange County Commissioners' meeting, the new Executive Director of the South Florida Water Management District (SFWMD), Henry Dean, pledged

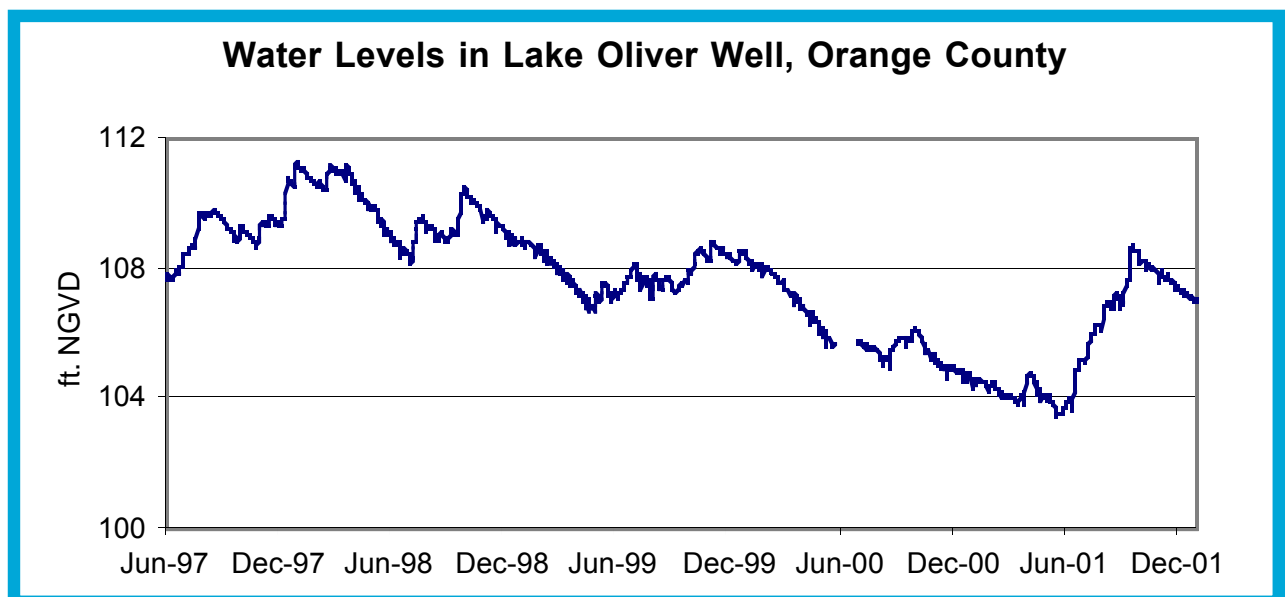
efforts to identify additional funding to assist Orange County in a number of proposed water resource projects. At the time, Mr. Dean was appearing before the August 28th Commission meeting to present the SFWMD's proposed budget for fiscal year 2002. During the meeting, Mr. Dean acknowledged that Orange County taxpayers have historically paid more to the Water Management District than they received in local projects and that Orange County taxpayers were helping pay for water management projects beyond their borders. Further, Mr. Dean committed, before the Orange County Commission, to reverse that trend and return more money to help fund many of the pressing needs within Orange County. In December the District announced that it had identified nearly \$3.7 million in additional money to help honor that commitment. The funds were identified after the final accounting of the 2001 budget year, which ended September 30.

"We have always valued our partnerships with local governments in Orange County," said Harkley Thornton, the SFWMD Governing Board Member. "Henry Dean's efforts to find additional partnership dollars for Orange County, I believe, demonstrates our commitment to reverse the possible inequities of the past and begin a new era of project cooperation for the benefit of Orange County and all the downstream communities."

Among the projects proposed for funding are projects that further the District's water supply initiative for Central Florida. In addition to \$1.9 million already dedicated to water supply planning in Central Florida for FY02, an additional \$450,000 is budgeted for projects designed to improve aquifer recharge and promote the development of integrated resource management plans in Central Florida.

Among the projects are:

- ❖ Three aerial contouring projects, totaling \$2.6 million, to develop maps of four major watersheds in Orange County — the Shingle Creek, Reedy Creek, Boggy Creek and Lake Hart and Mary Jane basins;





In November, a joint Governing Board meeting of the St. Johns River Water Management District and the South Florida Water Management District was held at the Harry P. Leu Gardens in Orlando.



- ❖ Water quality improvements for lakes in the Shingle Creek Basin—located in Ellenor, Tyler and Sandy;
- ❖ Improved flood control management for Lake Holden Terrace near Lake Holden;
- ❖ Exotic plant removal and wetlands replanting on the Butler Chain of Lakes and Lake Fran.

Joint St. Johns, South Florida Governing Board Meeting Held in Orlando

In an effort to better coordinate water supply planning and other water management efforts for Central Florida, the Governing Board members of the South Florida and St. Johns River Water Management Districts met in a joint governing board meeting at Harry P. Leu Gardens on November 14.

"Of course, the jurisdictions of water management districts are predominately based on surface water basins. Groundwater basins, however, do not follow the same set of boundaries, so it is critical that we meet and coordinate those issues that cross jurisdictional lines," said Harkley Thornton, the SFWMD Governing Board member whose region encompasses portions of Central Florida.

Recognizing that water supply issues cross District boundaries and must be coordinated, Mr. Thornton had called the meeting last spring. Much of the meeting included presentations outlining the implementation of the Kissimmee Basin Water Supply Plan and the St. Johns River Water Management District's Water 2020 plan. These were followed by a joint presentation outlining areas of planned cooperative action.

While the meeting followed a workshop format and no binding votes were cast, representatives of both districts agreed that the meeting was fruitful and would likely be the first of several inter-district meetings.



What's Next?

With the District budget recently approved for Fiscal Year 2002 (FY02) we are now able to solidify our plans for the coming year. Primary efforts in the northern part of the basin will continue with the hydrologic investigations and the alternative water studies begun in 2001. In the southern part of the basin, efforts will move forward with the evaluation of the Lake Istokpoga regulation schedule and a follow-up to the Tribe's water quality concerns. The following table (at right) provides the FY02 funding for projects in the KB planning area.

Questions or Comments?

Contact Chris Sweazy, P.G. at 1707 Orlando Central Parkway, Orlando, FL 32809
In addition, visit our website at:
<http://www.sfwmd.gov/org/pld/proj/wsp>.

BUDGETED PROJECT NAME

FY02 FUNDING*

Hydrogeologic Investigations	\$770,000
Shingle Creek (Orange County)	
Photography & Contour Mapping	\$350,000
Reclaimed Water Injection Pilot (Phase II)	\$200,000
Sinkhole Criteria Development (Phase II)	\$ 40,000
Indian Prairie Basin Water Quality Sampling	\$ 30,000**
Nashville Drainwell Retrofit (Orange County)	\$375,000
Lake Istokpoga Regulation Schedule Review	\$ 10,000
ASR Water Quality Studies	\$ 75,000

* does not include funding for staff ** estimated



sfwmd.gov

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406
561-686-8800 • FL WATS 1-800-432-2045
www.sfwmd.gov

MAILING ADDRESS: P.O. Box 24680
West Palm Beach, FL 33416-4680